

1. A light intensity control apparatus, comprising:

a light source driving device configured to drive a light source to generate a light having at least first and a second light intensity levels, said second level being higher than the first level;

a first light intensity detection device configured to detect the second light intensity level and provide an output;

a second light intensity detection device configured to detect an average of the intensity of the light and provide an output;

a light intensity detection device selection device configured to select one of the first and second light intensity detection devices in accordance with a selection instruction;

a reference providing device configured to provide first and second references of a second light intensity level and an average light intensity level;

a reference selecting device configured to select one of the first and second references corresponding to a selection instruction;

a comparison device configured to compare one of the outputs of the first and second light intensity detection devices with the corresponding selected one of the first and second references; and

a driving current adjustment device configured to adjust a magnitude of a driving current configured to drive the light source in accordance with the comparison result.

2. A light intensity control apparatus, comprising:

a light source driving device configured to drive a light source to generate a light having at least first, second, and third light intensity levels,

said second level being higher than the first, said third level being higher than the second;

a first light intensity detection device configured to detect the second light intensity level and provide an output;

a second light intensity detection device configured to detect an average of the intensity of the light and provide an output;

a light intensity detection device selection device configured to select one of the first and second light intensity detection devices in accordance with a selection instruction;

a reference providing device configured to provide first and second references of a second light intensity level and an average light intensity level;

a reference selecting device configured to select one of the first and second references corresponding to a selection instruction;

a comparison device configured to compare one of the outputs of the first and second light intensity detection devices with the corresponding selected one of the first and second references; and

a driving current adjustment device configured to adjust a magnitude of a driving current configured to drive the light source in accordance with the comparison result.

3. The light intensity control apparatus according to claim 2, wherein said third light intensity level is generated by determining a performance of the light source referring to the first and second generated light levels.

4. The light intensity control apparatus according to any one of claims 1, 2, and 3, wherein said light reads and/or writes information to and from a recording medium.

5. The light intensity control apparatus according to claim 4, wherein said first light intensity level is used to read information from the recording medium during a reproduction mode.

6. The light intensity control apparatus according to claim 4, wherein said first light intensity level forms a space on a recordation surface of the recording medium during a recordation mode.

7. The light intensity control apparatus according to claim 4, wherein said second light intensity level forms a pit or an amorphous portion on a recordation surface of the recording medium during a recordation mode.

8. The light intensity control apparatus according to claim 4, wherein said second light intensity level is detected by a sampling operation.

9. The light intensity control apparatus according to any one of claims 1, 2, and 3, wherein a reading light intensity is detected and stored during the reproduction mode as said first light intensity level for the recordation mode.

10. The light intensity control apparatus according to any one of claims 1, 2, and 3, further comprising a low pass filter for determining the average light intensity level.

11. The light intensity control apparatus according to any one of claims 1, 2, and 3, wherein said average is calculated from the light intensity levels when an average duty of a mark and space is constant and modulation timing of the light intensity levels are known.

12. The light intensity control apparatus according to any one of claims 1, 2, and 3, wherein said first reference is a prescribed value targeted by the second light intensity.

13. The light intensity control apparatus according to any one of claims 1, 2, and 3, wherein said second reference is a prescribed value targeted by the average light intensity.

14. The light intensity control apparatus according to claim 12, wherein said first reference level is compared with the output of the first light intensity detection device, and said second reference level is compared with the average light intensity value.

15. The light intensity control apparatus according to claim 13, wherein said first reference level is compared with the output of the first light intensity detection device, and said second reference level is compared with the average light intensity value.

16. The light intensity control apparatus according to any one of claims 1, 2, and 3, wherein said selection instruction varies depending upon a digital modulation speed of the light source.

17. The light intensity control apparatus according to any one of claims 1, 2, and 3, wherein said selection instruction controls the light intensity detection device selection device and the reference level selection device to select the first light intensity detection device and the first reference level, respectively, when the digital modulation speed is relatively low.

18. The light intensity control apparatus according to any one of claims 1, 2, and 3, wherein said selection instruction controls the light intensity detection device selection device and the reference level selection

device to select the second light intensity detection device and the second reference level, respectively, when the digital modulation speed is relatively high.

19. An information recording system configured to record information in a recording medium by irradiating a light beam from a light source under control of a light intensity control apparatus, said light intensity control apparatus comprising:

a light source driving device configured to drive a light source to generate a light having at least first and second light intensity levels, said second level being higher than the first level;

a first light intensity detection device configured to detect the second light intensity level and provide an output;

a second light intensity detection device configured to detect an average of the intensity of the light and provide an output;

a light intensity detection device selection device configured to select one of the first and second light intensity detection devices in accordance with a selection instruction;

a reference providing device configured to provide first and second references of a second light intensity level and an average light intensity level;

a reference selecting device configured to select one of the first and second references corresponding to a selection instruction;

a comparison device configured to compare one of the outputs of the first and second light intensity detection devices with the corresponding selected one of the first and second references; and

a driving current adjustment device configured to adjust a magnitude of a driving current configured to drive the light source in accordance with the comparison result.

20. An information recording system configured to record information in a recording medium by irradiating a light beam from a light source under control of a light intensity control apparatus, said light intensity control apparatus comprising:

a light source driving device configured to drive a light source to generate a light having all of first, second, and third light intensity levels, said second level being higher than the first, said third level being higher than the second;

a light source driving device configured to drive a light source to generate a light having at least a first and a higher second light intensity levels;

a first light intensity detection device configured to detect the second light intensity level and provide an output;

a second light intensity detection device configured to detect an average of the intensity of the light and provide an output;

a light intensity detection device selection device configured to select one of the first and second light intensity detection devices in accordance with a selection instruction;

a reference providing device configured to provide first and second references of a second light intensity level and an average light intensity level;

a reference selecting device configured to select one of the first and second references corresponding to a selection instruction;

a comparison device configured to compare one of the outputs of the first and second light intensity detection devices with the corresponding selected one of the first and second references; and

a driving current adjustment device configured to adjust a magnitude of a driving current configured to drive the light source in accordance with the comparison result and to generate the third light intensity level by supposing a performance of the light source referring to the first and second generated light levels.

21. The information recording system according to any one of claims 19 and 20, wherein said selection instruction is determined based upon a digital modulation speed of the light source.

22. The information recording system according to any one of claims 19 and 20, wherein said selection instruction controls the detection device selection device and the reference level selection device to select the first light intensity detection device and the first reference level, respectively, when the digital modulation speed is relatively low.

23. The information recording system according to any one of claims 19 and 20, wherein said selection instruction controls the detection device selection device and the reference level selection device to select the second light intensity detection device and the second reference level, respectively, when the digital modulation speed is relatively high.

24. The information recording system according to any one of claims 19 and 20, wherein said information recording system is included in a computer.

25. A method for controlling light intensity, comprising the steps of:

driving a light source so as to generate a light having a first and second, and third light intensity levels, said second level being higher than the first, said third level being higher than the second;

selectively detecting the second light intensity level and an average of the intensity of the light generated from the light source depending upon a modulation speed of the light source;

comparing a first or second target levels with the intensity detected by the second light intensity level or average, respectively; and

adjusting a magnitude of a driving current for driving the light source in accordance with the comparison result.

26. A light intensity control apparatus, comprising:

light source driving means for driving a light source in order to generate a light having at least a first and a higher second light intensity levels;

first light power detecting means for detecting the second light intensity level and providing an output;

second light intensity detecting means for detecting an average of the intensity of the light and providing an output;

light intensity detecting means selecting means for selecting one of the first and second light intensity detecting means in accordance with a selection instruction;

reference providing means for providing first and second references of a second light intensity level and an average light intensity level, respectively;



reference selecting means for selecting one of references corresponding to the selection instruction;

comparing means for comparing one of outputs of the first and second light power detection means with a corresponding one of the first and second references; and

driving current adjusting means for adjusting a magnitude of a driving current so as to drive the light source in accordance with the comparison result.